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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Finnegan, Henderson, Farabow,
Garrett & Dunner, L.L.P.
1300 I Street, N.W.
Washington, DC 20005-3315

EXAMINER	
FLETCHER, MARLON T	
ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/925,531

Applicant(s)

BINNARD, MICHAEL

Examiner

Marlon T Fletcher

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2001 .
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4 .
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4-6, 8, 9, 11, 14, 18, 20, 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebihara (5,726,542) in view of Watson (5,959,427).

As recited in claims 1, 14, and 23-28, Ebihara discloses a stage assembly comprising: a guide assembly including: a guide bar (2X) movable in a first direction, the guide bar inherently having a center of gravity and a guiding portion; a stage (figure 1) movable along the guiding portion of the guide bar in a second direction substantially perpendicular to the first direction and exerting a reaction force on the guide bar in the second direction, the stage having a center of gravity substantially positioned in a plane parallel to the first and second directions, the plane parallel to the first and second directions having the center of gravity of the guide bar substantially positioned therein as inherently understood and as discussed in column 6, lines 45-52; and an actuator component (3X, 4X) positioned on the guide bar substantially in the plane parallel to the first and second directions and aligned with the center of gravity of the stage in the second direction to apply a compensating force on the guide bar to cancel the reaction force exerted by the stage as discussed in column 7, lines 5-54.

As recited in claim 4, Ebihara discloses the stage assembly, comprising a pair of the guide assemblies spaced apart from each other in the first direction as seen in figure 1.

As recited in claim 6, Ebihara discloses the stage assembly, wherein the actuator component is positioned on one side of the guide bar and the another actuator component is positioned on the other side of the guide bar as discussed in column 6, lines 46-58 and as seen in figure 1 (3X, 3Y).

As recited in claim 8, Ebihara discloses the stage assembly, comprising a pair of the guide assemblies spaced apart from each other in the first direction as seen in figure 1.

As recited in claim 9, Ebihara discloses the stage assembly, wherein the actuator component and the other actuator component are positioned on one side of the guide bar as seen in figure 1.

As recited in claim 11, Ebihara discloses the stage assembly, comprising a pair of the guide assemblies spaced apart from each other in the first direction as seen in figure 1.

As recited in claim 20, Ebihara discloses the stage assembly, comprising a pair of the guide assemblies spaced apart from each other in the first direction as seen in figure 1.

Ebihara does not specifically recite components being in align with a center of gravity.

However, as recited in claims 1, 14, and 23-28, Watson specifically discloses a stage assembly comprising: a guide means movable in a first direction, the guide means having a center of gravity and a guiding portion as discussed in the abstract; a stage (10) movable along the guiding portion of the guide bar in a second direction substantially perpendicular to the first direction and exerting a reaction force on the guide bar in the second direction, the stage having a center of gravity substantially positioned in a plane parallel to the first and second directions, the plane parallel to the first and second directions having the center of gravity of the guide bar substantially positioned therein as disclosed in the abstract, discussed in column 3, lines 44-55 and column 4, lines 7-63; and an actuator component (60, 62) positioned on the guide bar substantially in the plane parallel to the first and second directions and aligned with the center of gravity of the stage in the second direction to apply a compensating force on the guide bar to cancel the reaction force exerted by the stage as discussed in column 4, lines 26-42 and lines 55-62. Watson further discloses a first actuator

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component positioned on the guide bar and aligned with the center of gravity of the stage in the second direction to apply a compensating force on the guide bar to cancel the reaction force exerted by the stage; and a second actuator component positioned on the guide bar and aligned with the center of gravity of the guide bar in the second direction to apply a force on the guide bar to control a position of the guide bar in the second direction as seen in figure 3.

As recited in claim 2, Watson discloses the stage assembly, wherein the center of gravity of the stage and the center of gravity of the guide bar are aligned with each other in the second direction and the actuator component applies a force on the guide bar to control a position of the guide bar in the second direction as disclosed in the abstract, and discussed in column 3, lines 44-55 and column 4, lines 44-62.

As recited in claim 5, Watson discloses the stage assembly, wherein the center of gravity of the stage and the center of the gravity of the guide bar are spaced apart from each other in the first direction and the guide assembly further includes another actuator component positioned substantially in the plane parallel to the first and second directions and aligned with the center of gravity of the guide bar in the second direction to apply a force on the guide bar to control a position of the guide bar in the second direction as discussed in column 4, lines 44-54.

As recited in claim 9, Watson discloses the stage assembly, wherein the actuator component and the other actuator component are positioned on one side of the guide bar as seen in figure 3.

As recited in claim 18, Watson discloses the stage assembly, wherein the first and second actuator components are positioned on one side of the guide bar as seen in figure 3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Watson with the apparatus of Ebihara, because Watson provides those teachings which may be inherent in Ebihara as discussed above, and further enhances the apparatus by providing those teachings and other elements provided in the discussion above.

3. Claims 3, 7, 10, 12, 13, 15, 16, 19, 21 and 22, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebihara in view of Watson as applied to claims 1, 2, 4-6, 8, 9, 11, 14, 18, 20, and 23-28 above, and further in view of Yaun et al. (6,130,517).

Ebihara and Watson are discussed above. As recite in claim 17, Ebihara discloses the stage assembly, comprising a pair of the guide assemblies spaced apart from each other in the first direction. Neither reference discloses the use of E cores as actuators nor an exposure apparatus.

However, as recited in claims 3, 7, 10, and 19, Yaun et al. disclose a stage assembly, wherein the actuator component is a pair of E cores spaced apart from each other in the second direction as seen in figure 1.

As recited in claims 12 and 21, Yaun et al. disclose an exposure apparatus including the stage assembly as discussed in column 3, lines 7-9.

As recited in claims 13 and 22, Yaun et al. disclose an object manufacture with the exposure apparatus as discussed in column 3, lines 3-11.

As recited in claim 15, Yaun et al. disclose the stage assembly, wherein the first actuator component is positioned on one side of the guide bar and the second actuator component is positioned on the other side of the guide bar as seen in figure 1.

As recited in claim 16, Yaun et al. disclose the stage assembly, wherein each of the first and second actuator components is a pair of E cores spaced apart from each other in the second direction as seen in figure 1.


It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the teachings of Yaun et al. with the teachings of Ebihara in view of Watson, because Yaun et al. enhances the combination, by providing an optional type of actuator as well as optional positioning of the actuators.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marlon T Fletcher whose telephone number is 703-308-0848. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Nappi can be reached on 703-308-3370. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Marlon T Fletcher
Primary Examiner
Art Unit 2837


MTF

July 27, 2002